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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,816	12/04/2003	Charles Hood	16356.836 (DC-05456)	7468

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HAYNES AND BOONE, LLP
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EXAMINER

HOFFBERG, ROBERT JOSEPH

ART UNIT	PAPER NUMBER
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2835

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/727,816

Applicant(s)

HOOD ET AL.

Examiner

Robert J. Hoffberg

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-11, 13-18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-11, 13-18 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>20070215</u> |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Response to Arguments

1. Applicant's arguments filed 2/2/07 have been fully considered but they are not persuasive.
2. The examiner understands that a secondary or non-compressive force is not transferred to the processor socket due to coupling of the curved load member to the frame member. However, the force is a function of the structural elements cooperating on each other. The applicant's claimed invention fails to distinctly point out how the structure of his invention is different than the prior art. Apparatus claims must be structurally distinguishable from the prior art. MPEP 2114. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997).
3. Regarding the motivation to combine Villanueva et al. with Hoper et al. (US 5,761,036). The examiner respectfully disagrees. The load member of Villanueva et al. is being modified by the curved resilient load member of Hopfer et al. for the purpose of providing a biasing force of the processor against the socket to insure electrical and mechanical contact (Hopfer, Col. 8, line 7). Both the load member of Villanueva et al. and Hopfer et al. need to be resilient to apply a force to (Para. 0010, lines 8-9) the processor sufficient to mate the processor with the processor socket. The force in both cases is a constant compressive force because both resilient load members are latched

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into a fixed position and do not move once latched. While Villanueva et al. is silent about the shape of the load member in the closed position, the shape will deform from the flat shape shown in the open position in order to apply a retaining force that maintains the processor within the processor socket. Applicant further argues that Villanueva et al. provides a force to maintain the processor in the processor socket, but fails to provide a force to mate the processor with the processor socket. The examiner respectfully disagrees. A force to maintain the processor in the processor socket insures that the processor is mated with the processor socket. The applicant argues that Villanueva et al. and Hopfer et al. cannot be combined. The examiner respectfully disagrees. The Hoper et al. reference is being used for the teaching that the resilient load member can be curved and not for the teaching of the mounting technique of the resilient load on the processor socket. Therefore, it would be obvious at the time of the invention by one of ordinary skill in the art to combine the teaching of curved resilient load member to the structure of Villanueva et al.

Claim Objections

4. Claim 1-5 objected to because of the following informalities: Claim 1, line 14, change "processor" to "processor socket". Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. The last limitation of independent claims 1, 7, 14, 21 and 22 includes a secondary force. It is not clear as to what type of force the secondary force is and what cooperating structural elements are creating this force. The specification in para. 0005 discusses secondary forces created by the retention device (resilient load member) and by the heat sink. It is understood by the examiner after the telephone interview of 2/28/07 that the secondary force is created by the resilient load member being connected in a substantially parallel engagement to the frame member.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-2, 4-5 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Villanueva et al. (US 2005/0030718) in view of Hopfer et al. (US 5,761,036).

Villanueva et al. teach a processor loading apparatus comprising: a board member (#26); a processor socket (#30) mounted on the board member; a processor (#28) seated in the processor socket; a frame member (#14) mounted on the board member; a plurality of connector portions (#16 and #24) on the frame member; a load member (#12) with a first end (#18) connected to one of the connector portions and a second end (#16) connected to another one of the connector portions, whereby the connection of the second end the retains the load member into a substantially parallel

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engagement (Para. 0019, line 16) with the processor and applies a constant compressive force to (Para. 0010, lines 8-9) the processor sufficient to mate the processor with the processor socket; a heat sink mounted on the frame (para. 0022, lines 11-13) and adjacent to the load member (see Fig. 3); and the load member having an opening (#20) formed therein permitting the processor to extend through the opening (See Fig. 4) into contact with a heat sink (#34), whereby a secondary force (#12 on #16 and #24) that is capable of warping the processor socket and results from the resilient load member applying the constant compressive force is not transferred to the processor socket (claims 1 and 22), the frame member surrounds the processor socket (see Fig. 2) (claim 2), the first end of the load member is pivotally connected (#16) to one of the connector portions and the second end is latched (#18) to another one of the connector portions (claim 4), and the processor includes a thermal connection surface (#28 top) (claim 5). Villanueva et al fail to teach a curved resilient load member that deforms the curved load member into a substantially parallel engagement. Hopfer et al. teaches a curved resilient (see Fig. 1) load member (#16) that deforms the curved load member into a substantially parallel (see Fig. 1) engagement. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the processor loading apparatus of Villanueva et al. with the curved resilient load member of Hopfer et al. for the purpose of biasing force of the processor against the socket to insure electrical and mechanical contact (Col. 8, line 7).

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9. Claims 3, 7-11, 13-18 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Villanueva et al. (US 2005/0030718) in view of Hopfer et al. (US 5,761,036) and further in view of Ma (US 6,791,847).

With respect to Claim 3, Villanueva et al. in view of Hopfer et al. disclose the claimed invention except for a support member. Ma teaches a support member (#72) mounted on the board member (#50) adjacent to the frame member (#30). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the processor loading apparatus of Villanueva et al. in view of Hopfer et al. with the support of Ma for the purpose of using the support member on an opposite side of the board to fasten the frame member to the board member.

With respect to Claims 7-11, 13-18 and 20, Villanueva et al. teach a heat sink mounting apparatus comprising: a board member (#26); a processor socket (#30) mounted on the board member and coupled to a mass storage device (Para. 0004, line 5) and a system memory (Para. 0004, line 5); a processor (#28) seated in the processor socket; a frame member (#14) mounted on the board member; a plurality of connector members (#16 and #24) on the frame member; a load member (#12) with a first end (#18) connected to one of the connector members and a second end (#16) connected to another one of the connector members, whereby the connection of the second end retains load member into a substantially parallel engagement (Para. 0019, line 16) with the processor and applies a constant compressive force to (Para. 0010, lines 8-9) the processor sufficient to mate the processor with the processor socket; a heat sink (#34) mounted on the frame and adjacent to the load member; and the resilient load member

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having an opening (#20) formed therein permitting the processor to extend through (see Fig. 4) the opening into contact with the heat sink, whereby a secondary force (#12 on #16 and #24) that is capable of warping the processor socket and results from the resilient load member applying the constant compressive force is not transferred to the processor socket (claims 7, 9 and 14), the frame member surrounds the processor socket (see Fig. 2) (claims 8 and 15), the first end of the load member includes a pivotal connection (#16) and the second end includes a latched connection (#18) (claims 10 and 17), the processor includes a thermal connection surface (#28 top) (claims 11 and 18), and the heat sink engages (see Fig. 3) the thermal connection surface (claims 13 and 20). Villanueva et al. fails to teach a support member and a curved resilient load member that deforms the curved load member into a substantially parallel engagement. Hopfer et al. teaches a curved resilient (see Fig. 1) load member (#16) that deforms the curved load member into a substantially parallel (see Fig. 1) engagement. Ma teaches a support member (#72) mounted on an opposite side (see Fig. 1) of the board member (#50) and adjacent to the frame member (#30). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the processor loading apparatus of Villanueva et al. with the curved resilient load member of Hopfer et al. and the support of Ma for the purpose of biasing force of the processor against the socket to insure electrical and mechanical contact (Col. 8, line 7) and providing a support member on an opposite side of the board and provide rigidity for fastening the frame member to the board member.

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Regarding method claim 21, the method steps recited in the claims are obviously necessitated by the device structure as taught by Villanueva et al. in view of Hopfer et al. and further in view of Ma as recited above in the rejection to claim 14.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Villanueva et al. (US 6,970,354) is the issued patent of previously cited patent application (US 2005/0030718).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert J. Hoffberg whose telephone number is (571) 272-2761. The examiner can normally be reached on 8:30 AM - 4:30 PM Mon - Fri. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MICHAEL DATSKOVSKIY
PRIMARY EXAMINER

RJH 3/2/2007 *RP*

